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Under Pressure : Self-Compassion as a Predictor of Task Performance and Persistence

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UNDER PRESSURE: SELF-COMPASSION AS A PREDICTOR OF TASK PERFORMANCE AND PERSISTENCE

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Abstract

Self-compassion is a characteristic composed of self-kindness, common humanity, and mindfulness that promotes adaptive cognitive, behavioral, and emotional processing. A self-compassionate mindset in the face of difficulties can lead to less anxiety and more self-forgiveness, and because of these benefits, some evidence suggests self-compassionate individuals tend to persist longer on a task after an initial failure. This study focuses on the extent to which self-compassion can improve task performance and persistence under pressure. Participants first completed the Self-Compassion Scale (Neff, 2003a) to measure trait levels of self-compassion. Self-compassion was then induced by leading participants to think about a mistake in terms of the components of self-compassion. Pressure was manipulated by stating that task performance on a series of logic problems was indicative of intelligence. Multiple regressions were conducted to explore the potential effects of both trait and induced self-compassion, as well as task pressure, as predictors of objective and subjective measures of performance and persistence. Analyses revealed that for controls, performance and persistence were highly contingent on pressure, while self-compassionately primed individuals tended to perform and persist more consistently across pressure scenarios. Additionally, self-compassionate individuals were more accurate with regard to subjective ratings of their objective performances. The realistic self-appraisals that self-compassionate individuals harbor offer a potential explanation for these unusual findings. Furthermore, it is recommended that future research focus on the connections between self-compassion and self-esteem during task performance, as well as strengthening the pressure and self-compassion manipulations.

Under Pressure: Self-Compassion as a Predictor of Task Performance and Persistence

Early research on task performance suggests that for simple, mundane tasks, slight performance pressures tend to lead to better overall performance than no pressure; however, many task theorists posit that *high* pressure to perform well in a multitude of scenarios may result in low task enjoyment and debilitated performance (Utman, 1997; Zajonc, 1965). Currently, our workforce and schools avidly focus on normative comparisons and performance-based grading systems that place exceptionally high performance pressures on both employees and students. This emphasis on extrinsic goals may ultimately cheat individuals out of highly enjoyable learning experiences and foster increases in task anxiety and self-consciousness.

Moreover, decreases in performance accuracy under high pressure are particularly detrimental in precision-based tasks like standardized tests or work performance evaluations (Hockey, 1986). Performance decrements that result from anxiety-induced worries decrease task-relevant processing resources, and thoughts about the situation's importance can compete with the attention typically allocated to task execution (Beilock, Kulp, Holt, & Carr, 2004). Pressure, in essence, creates a dual-task environment that can lead to acute maladaptive health and emotional outcomes (Schlotz, Schulz, Hellhammer, Stone, & Hellhammer, 2006).

Coping strategies aimed at relieving the stress of pressured performance encompass physical practices, like deep breathing and practicing posture, and mental practices such as meditation or cognitive restructuring (Gura, 2002). Some recent studies reveal that practicing self-compassion, a healthier way of conceptualizing the self, is a new and particularly valuable method of dealing with stressful situations that provides adaptive coping mechanisms against negative outcomes as well as increases in overall well-being (Allen & Leary, 2010; Neff, 2003a; Neff, 2003b; Neff & Germer, 2013). As of yet, no researchers have investigated the possible

benefits of a self-compassionate mindset not only as a buffer for the negative cognitive and emotional effects of performance pressure, but also as an instrument to *increase* objective and subjective performance accuracy and persistence on a difficult task under pressure.

Self-Compassion

Researchers define self-compassion as a trait consisting of three adaptive components - self-kindness, common humanity, and mindfulness - and their respective negative counterparts - self-criticism, isolation, and over-identification. Together, the adaptive components foster an unconditional positive regard for the self, especially in times of suffering or failure, while the negative components work to obstruct the action of self-compassion (Neff, 2003a). Self-kindness entails an understanding, forgiving attitude toward oneself during failures, rather than a reaction tinged with self-criticism and sharp judgment. Maintaining common humanity involves viewing both negative and positive events as part of a generalized, worldly human experience. People who express common humanity break the cycle of self-absorption and isolation often felt when problems arise and instead begin to embrace a sense of belonging during suffering that validates their emotions and cognitions (Neff, 2003a; Neff, 2003b). Keeping thoughts and feelings in a state of balanced, nonjudgmental awareness is the core characteristic of mindfulness. Mindfulness undermines over-identification with negative emotions and establishes an understanding of the fleeting nature of emotions in general (Reyes, 2012). Largely associated with self-pity, over-identification compels individuals to embellish the magnitude of their personal suffering, impeding them from endorsing a more objective perspective of their situation (Neff, 2003b).

For self-compassionate people, suffering is fully acknowledged, but placed aside to allow for more adaptive functioning in the expression of self-kindness and recognition of human connectedness (Goldstein & Michaels, 1985; Neff, Hsieh, & Dejitterat, 2005; Neff, Rude, & Kirkpatrick, 2007). Conversely, people low in trait self-compassion tend to adopt a state of mind that is harshly self-critical, isolated, emotionally imbalanced, and ruminative (Neff, 2003b). Evidence suggests that self-compassion as a whole is a mindset charged with positive emotion that counteracts the effects of negative feelings about the self and helps people realize that their failings do not have to define their lives (Breines & Chen, 2012; Neff, 2003b). Self-compassion can also be considered the fundamental ability to explore and understand one's own emotions while expressing positivity toward oneself; most importantly, however, it comes without the necessity to protect or bolster the self-concept (Neff, 2011; Neff, Hsieh, & Dejitterat, 2005; Zeidner, 1995).

Not to be confused with high self-esteem (which has numerous negative implications due to the comparative nature of the notion), high levels of self-compassion provide a buffer against anxiety and stress, and are associated with increased psychological well-being and positivity as evidenced by both self-report measures and therapist ratings (Neff, 2011; Neff, Kirkpatrick, & Rude, 2007). While self-esteem is also associated with increases in well-being, among other psychological benefits, it leans more toward the egocentrism and individualism needed to enhance the self-concept (Neff, 2003b). Self-compassion counters these tendencies, as self-compassionate individuals are inclined to treat feelings of inadequacy with acceptance rather than evaluative methods (Neff, 2011; Neff & Vonk, 2009).

Additional differences include indications that self-compassionate people make more accurate self-appraisals lacking in both enhancement and deprecation, suggesting that "self-

compassion may enhance wisdom because it provides the emotional safety needed to see the self clearly" (Neff, Rude, & Kirkpatrick, 2007, p. 912). As a direct result of more accurate appraisals, self-compassionate individuals are better able to maintain emotional equanimity and remedy maladaptive patterns of thought, emotion, and behavior because they can sympathetically recognize their own flawed humanity (Brown, 1999; Leary, Tate, Adams, Allen, & Hancock, 2007; Neff, 2003a). Moreover, individuals who embrace a self-compassionate mindset in the face of difficulties or failures tend to be happier, less anxious, more self-forgiving, and better able to cope by learning to endure or adapt to the reality of the situation - all while perpetuating both a positive self-image and emotional balance (Neff, 2003b; Neff, Hsieh, & Dejitterat, 2005; Zeidner, 1995). Correlational analyses demonstrate that self-compassion is also positively related to personality traits like curiosity and exploration, and has a strong negative relationship with aspects of neuroticism, like moodiness and anxiety (Neff, Rude, & Kirkpatrick, 2007). Because self-compassionate individuals have an "emotionally positive self-attitude that is not contingent on performance evaluations", they are more unrestrained to attempt activities or tasks out of personal interest rather than out of the eagerness to protect or augment self-esteem (Neff, Hsieh, & Dejitterat, 2005, p. 267).

Self-Compassion and Motivation

Several criticisms of self-compassion advanced in recent publications have included concerns that self-compassion might increase complacency and attenuate an individual's motivations to correct his or her mistakes (Baker & McNulty, 2011). Self-compassion may even interfere with self-improvement by curtailing self-criticism (a component of perfectionism), given that perfectionism is positively associated with achievement (Baker & McNulty, 2011). Researchers have also suggested that the self-forgiveness experienced while being self-

compassionate might also encourage "being too easy" on oneself and may come with costs such as diminished empathy for others and reductions in reparative behaviors after mistakes (Exline, Root, Yadavalli, Martin, & Fisher, 2011; Hall & Fincham, 2008).

Self-improvement motivation. In order to address these critiques, Breines and Chen (2012) discovered that self-compassion "may actually increase self-improvement motivation given that it encourages people to confront their mistakes or weaknesses without either self-deprecation or defensive self-enhancement" (p. 1133). Compassion is not extended to oneself because one is superior to or more laudable than others; rather it is offered because the individual recognizes his or her equality and interconnectedness with others (Brown, 1999; Neff, 2003a). The presence of warmth and understanding propagated by self-compassion may guide people to acknowledge the necessity for self-improvement without falling into despair or feeling overwhelmed by anxiety about the possibility of failure (Neff, Hsieh, & Dejitterat, 2005). The most productive forms of perfectionism are those that incorporate high personal standards but not self-criticism (Rice & Stuart, 2010), and although self-compassion is negatively correlated with self-criticism, it is not incompatible with assuming high principles for oneself (Neff, 2003b). Furthermore, self-forgiveness is considered a healthy process that promotes pro-social behaviors with the contingency that individuals take responsibility for their actions and appropriately experience remorse for any wrongdoings (Breines & Chen, 2012; Fisher & Exline, 2006). Leary and colleagues (2007) found that self-compassion may in fact *promote* a person's willingness to accept responsibility for their actions. Self-compassionate participants more readily acknowledged, after recalling a past mistake, that their personal characteristics ("the kind of person they are", p. 901) played a large role in causing the negative event. The factor that separated self-compassion from self-criticism in this example was that these participants did not

have adverse feelings toward mistakes that they considered to be common human experiences. As a result, these individuals were less stressed, less defensive, and reported less overall negative affect after writing about a mistake than participants lower in self-compassion (Leary et al., 2007).

Motivation following failure. When dealing with a failure, in particular academic or performance-based task failures, excessive self-blame can lead to diminished perceptions of competence and loss of intrinsic motivation (Mantzicopoulos, 1997). Preserving a degree of mindful psychological distance from one's emotions can abate affective reactions to the distress felt after a failure, and self-compassion may play a role in moderating reactions to real and potential failures by reducing the adverseness of events that threaten self-esteem (Leary et al., 2007). Self-compassionate people are less likely to avoid challenging tasks for fear of failure because failures are countered with feelings of kindness and understanding rather than self-derision - inspiring individuals to regard failures as learning experiences rather than indications of self-worth (Allen & Leary, 2010; Neff, Hsieh, & Dejitterat, 2005). In terms of coping with interpersonal failures, a self-compassionate mindset may accord individuals the ability to reframe the mistake in such a way that the growth potential is adequately acknowledged and over-identification and exaggeration of the mistake's importance is overlooked (Leary et al., 2007; Neff, Hsieh, & Dejitterat, 2005). As problem-focused coping strategies are difficult to utilize in the aftermath of a mistake, self-compassion research focuses on how to transform the maladaptiveness associated with emotion-focused coping into more adaptive strategies. Self-compassion facilitates these strategies by allowing individuals to boldly face and accept their feelings about the failure, while holding their emotions in balanced awareness without getting carried away (Neff, 2003b; Neff, Hsieh, & Dejitterat, 2005).

Self-compassion and persistence. Evidence suggests that one feature of self-compassion, positive self-regard, is strongly linked to persistence on a task after repeated failures (Baumeister, Campbell, Krueger, & Vohs, 2003). As such, self-compassionate individuals also tend to persist longer on a task, especially after an initial failure; and a strong commitment to persist on tasks inspires both intensity and stamina during task performance (Breines & Chen, 2012; Duckworth, Peterson, Matthews, & Kelly, 2007; Neff, Hsieh, & Dejitterat, 2005). Breines and Chen (2012, Experiment 3) specifically discovered that participants led to feel self-compassionate about a prior exam failure studied significantly longer for a second exam than participants primed to feel high self-esteem or neutral (no prime). Complementary research proposes that inherent persistence may be as essential to high achievement as ability, mainly through the promotion of diligence in the anticipation of failure or misfortune (Duckworth et al., 2007). Overall, a self-compassionate mindset during failures may increase task performance over time to the extent that effort and persistence is increased, though these findings are sparse and warrant additional replicable evidence (Breines & Chen, 2012; Duckworth et al., 2007).

Self-compassion and performance. In addition to gracefully handling failure situations through increased effort and diligence, research suggests that self-compassionate individuals may actually have a greater propensity to achieve - driven by the desire to magnify one's potential and well-being, and not simply for improvements in public image (Neff, Hsieh, & Dejitterat, 2005). Critics of the "advantages" of high self-esteem posit that individuals with high self-esteem but low self-compassion more often adopt a performance orientation toward personal goals, a state of mind inclined to defend or enhance self-worth. Individuals with performance orientations experience ego involvement, high pressure to demonstrate ability, and frequently attribute successes or failures to their own skills and abilities, evaluated through social

comparisons (Nicholls, 1984; Pintrich, 2000). These attributions oftentimes fail to take into account contextual differences, and are steeped in extrinsic motivations to try to enhance self-image through professing dominance to others through performance-approach goals, or defending against the label of "failure" through performance-avoidance goals (Elliot, 1999; Neff, Hsieh, & Dejitterat, 2005; Pintrich, 2000). Mastery orientation goals, on the other hand, are concomitant with increased effort and persistence at tasks and a greater willingness to entreat help from others (Ames, 1992; Neff, Hsieh, & Dejitterat, 2005; Ryan & Pintrich, 1998). Individuals with mastery goals demonstrate high task involvement, a state in which they are generally unconcerned with evaluation and are free to focus on the task (Nicholls, 1984; Utman, 1997). Recent studies provide evidence that a self-compassionate mindset is negatively associated with performance goals and positively associated with mastery goals, and mastery goal adoption was the strongest predictor of intrinsic motivation in both academic and work contexts (Neff, Hsieh, & Dejitterat, 2005; Ryan & Deci, 2000). Individuals who are intrinsically motivated to do well describe life as more enjoyable and satisfying, and are inspired by the pure curiosity and desire to cultivate life skills, master tasks, and genuinely understand new information (Allen & Leary, 2010; Dweck, 1986; Neff, Hsieh, & Dejitterat, 2005). These individuals tend to set high standards for scholarship, make effort attributions for their successes and failures, and view their mistakes as an inevitable, necessary aspect of learning (Neff, Hsieh, & Dejitterat, 2005).

Neff, Hsieh, and Dejitterat (2005) also raised the question of whether or not self-compassion was related to actual achievement and performance, but their main focus was on participants' subjective self-perceptions. A result of this study that touched on self-compassion's possible relationship with overall GPA revealed no significant correlation, but measures of GPA

are broad and do not take into account individual grades and their corresponding moments of self-compassion or self-criticism. Principal results identified that self-compassion is in fact more relevant to the motivational *patterns* underlying achievement and performance, rather than achievement itself (Neff, Hsieh, & Dejitterat, 2005). Taking a self-compassionate approach to failures should also eventually lead to better performance through self-improvement motivations; unfortunately, Breines and Chen (2012, Experiment 3) only found an *indirect* effect of self-compassion on performance. Increased study times, positively correlated with performance accuracy on tests, were observed in self-compassionately-primed participants, but actual performance on a test did not significantly differ between self-compassion, self-esteem, and control conditions (Breines & Chen, 2012, Experiment 3). With such bold claims made about the relationship between self-compassion and aspects of performance based almost solely upon subjective self-report measures, the current body of literature is notably lacking in objective measures that give this relationship a second look.

Building upon these findings, the present researchers aimed to launch a more in-depth investigation on both objective and subjective performance and persistence under pressure conditions to see if self-compassion affects task outcomes. The majority of self-compassion research has a notable dependence on correlational designs, underscoring a need for studies that utilize experimental manipulations (Leary et al., 2007). Consequently, for people around the world to reap the benefits of self-compassion, the present researchers focused on a more important question: can the degree to which one feels self-compassionate be altered? If so, people inherently low in self-compassion may eventually be taught to become more self-compassionate, which in turn may help them cope more adaptively with high pressure or failure situations, resulting in greater persistence and better performance on tasks.

Self-Compassion Inductions

Although most researchers in the field have studied self-compassion as a trait-like individual difference variable, some recent efforts have examined the effects of inducing a transitory state of self-compassion (Leary et al., 2007). Self-compassionate people enjoy plentiful psychological benefits and buffers against stress and anxiety, even after removing the effects of self-esteem; therefore, exploring the ability to become more self-compassionate through induction is the next logical step in self-compassion research. To date, only a few self-compassion inductions have been empirically tested using short-term manipulations, and the majority of these have shown modest effectiveness (Adams & Leary, 2007; Allen & Leary, 2010; Breines & Chen, 2012; Leary et al., 2007; Neff, Rude, & Kirkpatrick, 2007; Neff & Germer, 2013).

Experimental Design and Hypotheses

The current study primarily borrows techniques from Leary and colleagues (2007, Study 5) in hopes of inducing a self-compassionate mindset in participants, regardless of their trait levels of self-compassion, through guided writing prompts about a past mistake. Participants were asked to write about the mistake in either a self-compassionate or neutral way, and then perform a logic task under conditions of pressure or no pressure, resulting in four main conditions under examination in this study: Self-Compassion/Pressure, Self-Compassion/No-Pressure, Control/Pressure, and Control/No-Pressure. Presentation of logic problems as a measure of a shared ability that a majority of people value - intelligence - should not only induce feelings of pressure, but should exacerbate the debilitating effects of performance-based goals and afford a larger advantage to participants with mastery orientations (Utman, 1997). Self-

compassionate people tend to adopt more mastery or learning goals; therefore, it is expected that participants in the Self-Compassion condition would be less affected by performance pressure overall (Neff, Hsieh, & Dejitterat, 2005).

As a result, participants in the Self-Compassion/Pressure condition were predicted to perform objectively *more accurately* and *persist longer* than participants in the Control/Pressure condition. Participants in the Pressure condition were also projected to perform objectively more accurately and persist longer than those in the No-Pressure condition, simply because pressured participants are experiencing threat to intelligence. Additionally, because self-compassion is associated with higher levels of perceived competence (Neff, Hsieh, & Dejitterat, 2005), it is posited that participants in the Self-Compassion condition would subjectively rate themselves as more accurate and persistent on the logic task than Control participants, dependent on Pressure condition. Because moderate to high pressure is most beneficial to people with a mastery orientation, and research has demonstrated that there are no significant performance differences between mastery- and performance-goal adopters when pressure is low (Utman, 1997), it was hypothesized that there would be no performance- or persistence-based differences of any kind between the Self-Compassion and Control inductions in the No-Pressure condition. Lastly, trait self-compassion in all participants was also examined as a predictor with respect to potential dispositional effects on objective and subjective task performance and persistence.

Method

Participants

Two-hundred and sixty-one adults across the United States participated in an online Qualtrics survey through Amazon.com's Mechanical Turk work task marketplace. Of these, 12

participants who failed to complete the writing prompts and 29 who did not complete the logic task were excluded from the dataset, leaving a grand total of 220 participants (47.3% male). Participants ranged in age from 18 to 69 ($M = 35.2$, $SD = 12.8$), and were paid $0.50 each to fill out a 30 minute survey entitled "Logic Task Performance". The survey description informed participants that they would be asked to imagine and write about a situation, then complete a series of logic problems and fill out short psychological measures. Seventy-eight percent of participants identified as White, 8.2% as Black, 6.8% as Asian/Asian-American, 4.5% as Hispanic, and 2.5% as "Other".

Materials

Initial questionnaires. To explore individual differences, the researchers used the Rosenberg Self-Esteem Scale (RSE; $\alpha = .92$; Rosenberg, 1965) and the long Self-Compassion Scale (SCS; $\alpha = .90$; Neff, 2003a). The construct of self-esteem was measured because of its theoretical similarity to self-compassion, and was only intended to rule out potential confounds between self-compassion and self-esteem. The RSE, a 10-item self-report scale, boasts a strong Guttman scale reproducibility coefficient ($\alpha = .92$), signifying exceptional internal consistency (Rosenberg, 1965). Test-retest reliability over the course of two weeks affirms stable correlations of .85 and .88. The RSE establishes concurrent, predictive, and construct validity, correlating significantly with other self-esteem measures and in the predicted direction with measures of anxiety and depression (Rosenberg, 1965). Example items include *"I feel that I have a number of good qualities"* and *"At times, I think I am no good at all"*, and are rated on a 5-point scale from 1 *(strongly disagree)* to 5 *(strongly agree)*.

The SCS is a 26-item self-report scale to measure trait self-compassion that examines six factors representing the positive and negative sides of the three components of self-compassion (Neff, 2003a). This scale consistently demonstrates high internal reliability ($\alpha = .90$), internal consistency ($\alpha = .90$), and test-retest consistency (.93, Allen & Leary, 2010; Neff, 2003a). Pearson's correlation coefficients calculated to determine discriminant validity from measures of social desirability bias revealed a non-significant correlation between self-compassion and socially desirable responding, ($r = .05$, $p = .340$; Neff, 2003a). To test construct validity, Pearson's correlation coefficients were conducted between the SCS and similar scales (Self-Criticism subscale of the DEQ, Social Connectedness Scale, Trait-Meta Mood Scale, etc.), and determined significant negative correlations with maladaptive outcomes ($ps < .010$) and significant positive correlations with adaptive outcomes ($ps < .010$; Neff, 2003a). Example items include *"I try to be loving towards myself when I'm feeling emotional pain"* (self-kindness/judgment), *"When I'm really struggling, I tend to feel like other people must be having an easier time of it"* (common humanity/isolation), and *"When I'm feeling down, I tend to obsess and fixate on everything that's wrong"* (mindfulness/over-identification). Items are answered using a 5-point Likert-type scale ranging from 1 *(almost never)* to 5 *(almost always)*.

Additional individually-selected distracter questions taken from the Belief in a Just World (BJWS; Rubin & Peplau, 1975) and Self-Monitoring Scales (SMS; Snyder, 1974) were embedded randomly in the Self-Compassion Scale to divert attention from the study's true purpose. Items from these scales were not considered in the analysis.

Logic task. Seven logic problems were obtained from the Law School Admission Test (LSAT) and used as a difficult task for participants to attempt, largely because of the intricate attention to detail necessary for answering these types of questions (See Appendix A). The

questions were not pilot-tested for difficulty; however, overall low-to-average participant scores indicate that the task was difficult enough to require considerable amounts of persistence and complex thought, but not impossible. This type of challenging task is often used to measure persistence and other self-improvement-motivated behaviors because of the amount of time needed to ascertain a correct answer (Breines & Chen, 2012; Di Paula & Campbell, 2002).

Objective measures of performance and persistence. After completion of the logic task, participants were assigned a score ranging from 0 to 7, depending on the number of problems they answered correctly. A percentage calculated from this number represented an objective measure of performance accuracy. Page timing mechanisms that recorded participants' first and last clicks, as well as time spent on each logic question/page (in seconds), were included as appropriate objective measures of persistence (DiPaula & Campbell, 2002; Williams & DeSteno, 2008).

Other questionnaires.

Subjective measures of performance and persistence. Questions regarding self-reported perceptions about the difficulty, effort, stress, time, pressure, percent correct, and performance accuracy experienced during the logic task were presented to participants in a Likert-type scale ranging from 1 *(almost no time/effort/stress, etc.)* to 7 *(a lot of time/effort/stress, etc.)*. Inter-item reliability analyses were run on task aspects suspected to be correlated in order to compound scores, and the results may be found in Table 1. Self-ratings of difficulty, stress, and pressure (termed "Subjective Distress"), time and effort (termed "Subjective Persistence"), and performance and percent correct (z-scored for standardization; termed "Subjective Performance") were combined as new averages prepared for analysis (See Appendix B).

Other questions. Final questions in the survey explored in greater depth the timeframe for the personal mistake *(e.g., "How long ago did this mistake occur?")*, coded into a 6-point scale ranging from 1 *(within the past week)* to 6 *(over a decade ago)*, and the degree to which that mistake was considered good or bad, on a 7-point scale ranging from 1 *(extremely bad)* to 7 *(extremely good)*. Regarding the logic task, participants were asked to provide an indication of their personal experience with similar logic problems by selecting one of four items, ranging from (*"I have never solved a logic problem before being in this study")* to *("I am an expert at logic problems and I solve them all the time"*; see Appendix C).

Manipulation checks. Self-compassion manipulation checks were determined through two questions that assessed how self-critical or self-compassionate participants believed they were during the writing prompts. These questions asked *"To what extent were you self-critical/self-compassionate when writing about your mistake?"*, and were rated on a 7-point scale ranging from 1 *(not at all self-critical/-compassionate)* to 7 *(extremely self-critical/-compassionate)*. To test the effectiveness of the pressure induction, a similar question about the extent to which participants believed the logic problems were a measure of intelligence was rated on a 7-point scale ranging from 1 *(not at all)* to 7 *(extremely*; see Appendix D).

Procedure

Participants began the questionnaire by reading an informed consent form that described the benefits and risks of completing the study, and the voluntary nature of participation. If participants agreed to continue with the survey, consent was indicated by clicking the "next" button at the bottom of the page, which was linked to the individual difference measures (Self-Compassion Scale and Rosenberg Self-Esteem Scale).

Upon completion of the scales, participants were asked to think about a time they had made a horrible mistake and to write about it in one or two sentences. Further instructions from a series of three prompts were designed to help the participants process the mistake they wrote about. Participants were asked to follow these prompts as closely as possible while keeping the message of the prompts in mind as they wrote, and were randomly assigned to receive either Self-Compassion prompts (n = 100) or neutral (Control) prompts (n = 120). The Self-Compassion prompt instructions were created in keeping with Leary and colleagues' approach (2007, Study 5) and addressed the three individual components of self-compassion. The self-kindness prompt was *"Write a paragraph expressing kindness and concern to yourself in the same way you might express kindness and concern for someone close to you who had the same experience."* The common humanity prompt read *"List some of the ways in which other people have experiences similar to the one you described."* Finally, the mindfulness prompt read *"List the emotions you felt during this event. Next to each emotion, explain (as objectively as possible) why you felt that emotion. Try not to get carried away with your emotions."*

The Control instructions were designed to parallel the self-compassion instructions in terms of providing basic elaboration on the mistake. The three prompts read *"Write a paragraph describing your role in this event"*, *"Who else was involved in this event?"*, and *"Describe your feelings about this event."* The Control instructions reflect the techniques implemented by Leary and colleagues (2007) and Breines and Chen (2012) to ensure that simply writing about negative events in a self-disclosing style will not abate negative emotions (Pennebaker, Colder, & Sharp, 1990; see Appendix E).

Participants were then randomly assigned to a Pressure (n = 107) or No-Pressure (n = 113) condition that introduced differing directions for completing seven LSAT logic problems.

In the Pressure condition, participants were told *"These logic problems are a direct measure of intelligence and can accurately predict one's ability to succeed."* In the No-Pressure condition, participants were told *"These logic problems are NOT a direct measure of intelligence and CANNOT accurately predict your ability to succeed."* All participants were directed to try the best that they could to answer each question (See Appendix F).

Logic questions included an introductory story and necessary criteria, and all seven of the logic problems presented were based on this information (See Appendix A). Calculated logic task scores, as well as page timing mechanisms, were not revealed to participants in any way to decrease potential distress or negative affect.

Next, participants completed the final questionnaires and the manipulation checks (See Appendices B-D). The questionnaire ended with basic demographic items and a debriefing form revealing to participants that the description stating the logic problems were a direct measure of intelligence was fabricated as part of the study.

Results

Preliminary Analyses

Means, standard deviations, Cronbach's alphas, and bivariate correlations for all dependent variables can be found in Table 1. Alpha levels of .05 or less and one-tailed tests were used to determine significance for the correlations.

A 2 x 2 analysis of variance (ANOVA) involving both levels of the self-compassion manipulation condition (Self-Compassion, Control) and both levels of the pressure manipulation condition (Pressure, No-Pressure) was performed to examine any pre-existing group differences

between participants' trait self-compassion scores. This analysis established that trait self-compassion scores did not significantly differ between the Self-Compassion condition ($M = 3.17$, $SD = .72$) and Control condition ($M = 3.01$, $SD = .68$; $F = 3.01$). In addition, trait self-compassion scores did not differ between the Pressure condition ($M = 3.07$, $SD = .70$) and No-Pressure condition ($M = 3.10$, $SD = .70$; $F < 1.00$). Finally, there was no significant interaction ($F < 1.00$), demonstrating that random assignment was successful in evenly distributing trait self-compassion across groups.

Manipulation checks. Information regarding the following manipulation checks can be found in Table 2.

Pressure. An independent-samples *t*-test was performed to examine differences between the Pressure and No-Pressure conditions in terms of perceptions of pressure. Overall, the pressure manipulation was successful - participants in the Pressure condition believed the logic problems were a measure of their intelligence significantly more than participants in the No-Pressure condition.

Self-criticism. An independent-samples *t*-test was performed to examine differences between the Self-Compassion and Control conditions in terms of perceptions of self-criticism. These results revealed that participants in the Self-Compassion condition perceived themselves to be significantly less self-critical than those in the Control condition.

Self-compassion. An independent-samples *t*-test revealed marginally significant differences between the Control and Self-Compassion conditions for the degree to which participants wrote about their mistake compassionately, showing that participants in the Self-

Compassion condition perceived their response as more self-compassionate than participants in the Control condition.

Hierarchical Regression Analyses

Hierarchical regression analyses were used to examine the effect of trait self-compassion, manipulated self-compassion, and pressure on participant outcomes. Given the close relationship between self-compassion and self-esteem (See Table 1), self-esteem was initially entered as a covariate in the analysis. However, any effect of self-esteem did not change the significance of subsequent effects and was removed from the analysis. One item on the survey that advanced inquiry about participants' past experience with similar logic problems showed that trait self-compassion and logic task experience were significantly negatively correlated (See Table 1). Consequently, experience with logic problems was also originally entered as a covariate in the analyses, but removed after it was found that its effects did not act to change the significance of successive effects regarding the self-compassion and pressure manipulations, which were of principal importance to the researchers. Inclusion of the experience predictor did, however, nullify the effect of trait self-compassion, but only in terms of objective performance.

Ultimately, zero-centered trait self-compassion, manipulated self-compassion (dummy coded), and pressure (dummy coded) were entered in Step 1, the two-way interactions were entered in Step 2, and the three-way interaction was included in Step 3. Interactions between the two categorical variables were decomposed using simple main effect analyses with a Bonferroni adjustment.[1] Interactions with a continuous predictor were explored using Aiken and West's (1991) method for interpreting multiple regression interactions, wherein values were obtained to

[1] Analysis of covariance test results produced parallel findings to regression results.

represent one standard deviation below and above the mean for trait self-compassion (See Table 1).

Perceptions of the mistake. Because participants were free to write about any type of mistake, low versus high self-compassion participants may have written about mistakes that were systematically different in terms of their severity (Leary et al., 2007). Hierarchical regression analysis revealed no effect of the experimental self-compassion manipulation on ratings of how "good or bad" the event was (Control $M = 2.34$, $SD = 1.45$; Self-Compassion $M = 2.64$, $SD = 1.43$; $\Delta R^2 = .038$, $\beta = .084$, $p = .215$); however, a significant effect of trait self-compassion indicated that people high in self-compassion tended to rate their mistakes as "less bad" than those low in self-compassion ($\Delta R^2 = .038$, $\beta = .165$, $p = .015$). The researchers expected that ratings of the mistake for all participants would trend in the "bad" direction (low scores) because of the nature of personal mistakes, which are not often perceived as "good".

Objective measures. Information regarding the following regressions can be found in Table 3.

Performance. In terms of trait self-compassion, results revealed a somewhat startling effect showing that trait self-compassion was negatively related to performance. As stated earlier, more self-compassionate participants reported less logic task experience than less self-compassionate participants. Including logic task experience as a covariate in the regression model eliminated the effect of trait self-compassion on objective performance.

In keeping with the hypothesis for objective performance, a significant main effect of pressure was discovered such that participants in the Pressure condition ($M = 2.72$, $SD = 1.61$) performed significantly more accurately on the logic problems than those in the No-Pressure

condition ($M = 2.18$, $SD = 1.46$). There was no main effect of manipulated self-compassion, and no interactions between the main variables of interest were found.

Persistence. Trait self-compassion and manipulated self-compassion had no main effect on the amount of time, in seconds, participants spent completing each logic problem, regardless of pressure. In keeping with our hypothesis, participants in the Pressure condition ($M = 66.43$, $SD = 49.40$) persisted significantly longer on the logic task than participants in the No-Pressure condition ($M = 53.35$, $SD = 39.16$).

A significant self-compassion manipulation by pressure manipulation interaction on objective persistence was found, and the results indicated that participants in the Self-Compassion condition persisted similarly and moderately across Pressure conditions (No-Pressure $M = 57.96$, $SD = 35.73$; Pressure $M = 56.84$, $SD = 43.03$), while participants in the Control condition persisted significantly longer in the Pressure condition ($M = 76.02$, $SD = 52.68$) than in the No-Pressure condition ($M = 48.73$, $SD = 41.66$; see Figure 1). Further analyses between the Control and Self-Compassion groups in the Pressure condition also reveal a significant difference between the two, but in the opposite direction of the original hypothesis, noting that self-compassionately primed people actually spent significantly *less* time on the logic task than those who were not primed to feel self-compassionate. No other interactions were observed.

Subjective measures. Information regarding the following regressions can be found in Table 4.

Performance. The hypothesis suggesting that participants in the Self-Compassion condition will subjectively rate their performance accuracy as better than those in the Control

condition was not supported. The z-scored (standardized) composite variable for performance accuracy and percent correct ("Subjective Performance") showed no significant main effects of trait self-compassion, the self-compassion manipulation, or the pressure manipulation.

However, a two-way interaction between the self-compassion manipulation and trait self-compassion was found for subjective performance. The interaction showed that for people with low trait self-compassion, the self-compassion manipulation did not work to significantly increase how well they thought they performed on the logic task, as there were no significant differences between those in the Self-Compassion condition and those in the Control condition. Nonetheless, a trend in the data suggests that low-self-compassionate participants rated their performance as better when they were in the Self-Compassion condition compared to the Control condition. For people with high trait self-compassion, the opposite trend was revealed, as these participants thought they performed significantly worse on the logic task in the Self-Compassion condition compared to the Control condition (see Figure 2).

Another two-way interaction between the pressure manipulation and trait self-compassion found a similar pattern in the data: people with low trait self-compassion experienced no significant changes in self-ratings of performance in either of the Pressure conditions. For people with high trait self-compassion, participants thought they performed significantly worse in the Pressure condition than the No-Pressure condition (see Figure 3).

Persistence. Subjective persistence was measured using the composite variable for time and effort ("Subjective Persistence"), and analyses disclosed a marginally significant main effect of trait self-compassion, such that high-self-compassion participants subjectively put more time and effort into logic problem completion than low-self-compassion participants. No supporting

evidence for the hypothesis that participants in the Self-Compassion condition would subjectively rate their persistence as higher than those in the Control condition was found; likewise, no significant main effect of pressure was observed.

Additionally, a marginally significant two-way interaction between the pressure and self-compassion manipulations revealed that participants in the Control condition believed they put forth the most time and effort on the logic problems when they were in the Pressure condition ($M = 5.13$, $SD = 1.29$) as opposed to the No-Pressure condition ($M = 4.70$, $SD = 1.45$). Participants in the Control/Pressure condition were also significantly different from those in the Self-Compassion/Pressure condition ($M = 4.62$, $SD = 1.37$), indicating a trend in the opposite direction from what was originally predicted (See Figure 4). No other significant interactions were found.

Distress. Analyses of the combined variable for assessing the difficulty, stress, and pressure participants felt during the logic task ("Subjective Distress") showed no significant main effects of trait self-compassion, the self-compassion manipulation, or the pressure manipulation. However, a significant interaction between the pressure manipulation and trait self-compassion revealed that for people with high trait self-compassion, being in the Pressure condition elicited marginally more feelings of subjective distress than did being in the No-Pressure condition. For participants with low trait self-compassion, results were trending in the opposite direction: experiencing no pressure during the logic task seemed to evoke more feelings of distress than experiencing pressure, although these values of subjective distress were not significantly different from each other (see Figure 5). No other significant interactions were found.

Discussion

The main goals of the current study include exploring the effect of self-compassion on task performance and persistence under pressure, as well as the potential for self-compassion to be temporarily induced as a state of mind. After writing about a personal mistake either self-compassionately or neutrally, some participants were primed to feel pressured - to believe a logic task was a measure of intelligence - while others were not. Both objective and subjective data were collected to gather a complete picture of the impact of self-compassion, previously unstudied in this context, on multiple variables involved in task completion. Essentially, the researchers' expectations for the effects of pressure were confirmed; however, self-compassionate priming and some trait self-compassion effects resulted in different outcomes than originally predicted.

Main Findings

Perceptions of the mistake. The objective severity of mistakes was not accounted for in this study, so it is likely that individuals with mistakes such as, *"I accidentally stepped on a baby"* will naturally have a more difficult time feeling self-compassionate than those who wrote about mistakes like, *"In third grade, I assembled a skeleton incorrectly"*. However, the researchers expected that a wide range of severities appeared across conditions and any effects of mistake severity should be attenuated by random assignment.

The modal timeframe for participant mistakes fell into the category "about a year ago", indicating that most of the mistakes participants wrote about were somewhat notable mistakes in their lives, and not simply, *"I poured cereal in the bowl and didn't have any milk"*. As expected,

there was no significant relationship between trait self-compassion and how long ago the mistake was committed (see Table 1).

Objective measures. Overall, objective performance and persistence increased with pressure, suggesting that telling participants that a task is indicative of intelligence encourages them to try harder on the task, resulting in better overall scores. As threat to intelligence was most salient for the Pressure group, it is natural to expect that the logic task would be perceived as more intrinsically important, and participants would work hard to make sure their performance is representative of their own abilities.

The self-compassion manipulation did not affect objective performance; however, it did impact persistence. Participants in the Control condition persisted longer under pressure than no pressure. Conversely, participants in the Self-Compassion condition persisted the same regardless of pressure. Previous findings emphasize the ability of self-compassionate individuals to more accurately and stably perceive their abilities and weaknesses and may explain their relatively consistent performance and persistence across the pressure conditions (Leary et al., 2007; Neff, Hsieh, & Dejitterat, 2005). Contrary to our original hypothesis, the significant difference detected between the Self-Compassion and Control conditions under pressure leaned in the opposite direction as predicted. Participants in the Self-Compassion condition were altogether quicker to complete the logic task (thus resulting in less persistence) than those in the Control condition. However, the mean times spent on the logic task for both Self-Compassion conditions fell between those collected for the Control conditions, indicating that being self-compassionate causes participants to persist significantly more than controls in the No-Pressure condition and significantly less than controls in the Pressure condition. It seems that in pressured situations, despite what research says about the relationship between self-compassion and

mastery goal orientation (see Neff, Hsieh, & Dejitterat, 2005; Utman, 1997), people primed to be self-compassionate do not persist longer on tasks than neutrally-primed people. Instead, self-compassionately primed people tend to persist more consistently overall.

As for trait self-compassion, there were no significant differences in persistence between high- and low-self-compassionate people across pressure conditions. However, the finding that participants low in self-compassion actually performed significantly more accurately on the logic task than those high in self-compassion is particularly striking. An explanation for these results likely lies in the unusual negative correlation discovered between trait self-compassion and logic task experience. It could be that the less experience one has in a particular area, the more self-compassionate one is willing to be about performance in that area with respect to accuracy. This notion requires more extensive investigation into whether or not the effect of experience is replicable.

Overall, pressure seems to matter greatly for controls in aspects of objective task performance, but the effects of pressure are weakened when induced self-compassion is considered. Perhaps in pressure situations, people high in self-compassion (similar to those high in self-esteem) more easily realize when the task demands more than their abilities can offer, and it is time to resign (Baumeister et al., 2003). Another possibility could be that persistence is altogether unaffected by self-compassion during an *initial* (singular) task such as the one presented in this study, and that self-compassion is more beneficial for persistence on tasks *after* an established task failure. Participants were not informed of, nor given a chance to improve their scores in the current study. As self-compassionate people hold more mastery goals than performance goals, perhaps including a second task after a practice period would yield more

conclusive results about objective performance and persistence under pressure (Neff & Vonk, 2009).

Subjective measures. Regarding subjective performance and persistence, the results were slightly more complex. Pressure only impacted subjective ratings of performance for participants who were high in self-compassion, showing that highly self-compassionate participants thought they performed worse under pressure. Therefore, they were evaluating their performance more critically when they believed that the task was indicative of intelligence - this may be due to the combination of the lack of experience with logic problems and the maintenance of realistic self-appraisals. High-self-compassionate participants additionally felt more distressed under pressure compared to no pressure. In line with this effect, participants manipulated to think self-compassionately felt that they persisted less under pressure than those not manipulated to think self-compassionately. These participants are viewing their persistence accurately, however, given that participants in the Self-Compassion condition objectively did not persist as long as those in the Control condition. Confirmatory evidence supports that of all possible groups, self-compassionate individuals were indeed found to be the most accurate in terms of predicting their own objective performance and persistence.

A significant interaction between trait self-compassion and the Self-Compassion manipulation revealed that the manipulation was not successful in inspiring increases in performance perception for low-self-compassionate people. It also showed that high-self-compassionate people thought they performed the worst when they were in the Self-Compassion condition compared to the Control condition. Discouragingly, this result implies that inducing people *low or high* in self-compassion to experience state self-compassion does not seem to make participants feel better about their performance on a difficult task. Alternatively, even

though increases in performance perceptions may be beneficial, it is possible that self-compassion induction helps to entice all participants to appraise their performances more realistically, without either enhancement or deprecation.

Therefore, it appears that self-compassion may actually have a negative relationship with subjective interpretations of performance and persistence. Incorporating this information with previously ascertained knowledge about the self-perceptive and achievement patterns of self-compassionate people provides a possible reason for this relationship. Self-compassionate individuals may be more willing to realistically accept their flaws, more likely to label their task performance outcomes as direct results of their own personal character traits, and more prepared to take full responsibility for their own performances (Leary et al., 2007; Neff, Hsieh, & Dejitterat, 2005; Neff, Rude, & Kirkpatrick, 2007). Alternatively, these results hold possible implications for the notion that a self-compassionate mindset might not be adaptive all of the time, and particularly with regard to aspects of performance and persistence under pressure. Future studies that investigate the potentially debilitating effects of a self-compassionate mindset pertaining to such aspects should be considered.

Limitations

Online survey. Participant activity was decidedly difficult for the researchers to monitor considering the study took place entirely online. The page metric data did not take into account if a participant walked away in the middle of the survey and returned to complete it later. This is a particularly meaningful issue, given how objective persistence was measured in this study. To help counteract this behavior, participants were told to complete the survey and logic problems in one sitting before they began. Additionally, given that participants required an active internet

connection to complete the questionnaire, issues with connectivity as well as using online search tools to obtain logic task answers could not realistically be accounted for. The potential for biased self-selection was also somewhat notable because the title emphasized the logic portion of the task. Therefore, the survey title may have unknowingly appealed to people who had substantial prior experience in solving logic problems, and deterred those who harbor an aversion to logic problems. Regarding prior experience, it is also difficult to assess whether the negative relationship observed in the present study between trait self-compassion and logic task experience levels was real, or appeared as a result of this particular sample. The researchers propose that the original hypotheses be retested with a different type of task in future studies in order to eliminate any potential effects of experiential knowledge.

Self-esteem condition. The present study likewise did not assess the unique effects of self-compassion versus self-esteem. Although a scale to measure trait self-esteem was utilized, a self-esteem manipulation prompt was not included - a feature absent in nearly all prior self-compassion induction work, with the exception of Breines and Chen (2012) and Leary and colleagues (2007, Study 5). Subsequently, because high self-esteem promotes increased objective performance and persistence in the face of moderate pressure (Baumeister et al., 2003), individuals primed to have high self-esteem in this particular pressure scenario may have actually performed the most accurately and persisted the longest.

Self-compassion manipulation. Strengthening the self-compassion manipulation is one of the most important points to consider in future studies - as self-compassion induction does not currently have nearly as large an influence on cognitions, emotions, and behaviors as trait self-compassion. Participants in the present study may have had low motivation to complete the logic task while keeping the message of the self-compassionate prompt in mind because of the casual

way self-compassion was mentioned (read in the instructions). Additionally, because participants completed the Self-Compassion Scale before writing about their mistake, they could have been primed to think about aspects of their personality that might interfere with the manipulation.

The current study demonstrated minor successes in the overall self-compassion manipulation; the prompt succeeded in decreasing the negative feelings of self-criticism, but was ultimately only somewhat effective at warranting feelings of self-compassion. This relative ineffectiveness may have circumscribed the power to detect valid effects. Given the limited ways that self-compassion has been manipulated in previous studies, a more robust and relevant introduction to a self-compassionate mindset would likely produce different performance and persistence outcomes. Perhaps longitudinal studies that incorporate sessions of intensive self-compassion training, like that of Neff and Germer (2013), might be useful in exploring the long-term effects of self-compassion on aspects of task completion.

Along with the need for inclusion of a self-esteem condition when examining performance effects, future research should incorporate more unique control conditions in order to hone in on the mechanisms by which the self-compassion manipulation works - specifically to separate and identify the exclusive effects of the three individual components of self-compassion (Adams & Leary, 2007). Once more is understood about the processes that activate a self-compassionate mindset in individuals, more highly effective manipulations can be designed with the intent to tap into such processes.

Increasing pressure. The pressure manipulation was successful in that participants in the Pressure condition rated that they were *led to believe* the logic task was a measure of their intelligence more than participants in the No-Pressure condition. However, this question may not

be a true reflection of whether or not participants *actually believed* the logic task was a direct indication of their intelligence levels. On average, participants rated the pressure they felt during the logic task as moderate ($M = 4.47$ on a scale of 1-7), revealing that the pressure situation presented in this study may not have simulated the kind of intense performance pressures that systematic laboratory observation would likely have invoked. In a scenario of extremely high pressure, the Control group participants' persistence and performance may show a sharp decline (Utman, 1997; Zajonc, 1965), whereas Self-Compassionate group participants' persistence and performance might continue to remain stable. Future research should also consider the effects of self-compassion with respect to severe life challenges rather than daily hassles (Allen & Leary, 2010), as these types of hardships likely produce more profound high-pressure situations.

Future Directions

High self-compassion leads to more effective self-regulation strategies in terms of goal-setting and risk-taking, and fosters a knowledge and clarity about one's own limitations (Neff, 2003b). Truly successful inductions would inspire similar effects in participants for prolonged periods of time. While some long-term inductions do exist - and promote lasting changes in overall well-being (Neff & Germer, 2013) - those studies might benefit from measuring task performance and persistence as well. Perhaps if strongly induced self-compassion leads to real, sustained behavioral and cognitive changes over time, it would be beneficial to teach self-compassion skills to individuals in clinical and non-clinical settings alike (Breines & Chen, 2012; Neff & Vonk, 2009). Repeatedly responding with self-compassion to performance failure situations could potentially inspire students and employees to develop more adaptive studying and work habits, ultimately leading to increased self-improvement motivations and improved performance aspects over the course of the semester or work year (Breines & Chen, 2012).

In clinical settings, fostering a self-compassionate mindset may be most advantageous for clients who are excessively self-critical or self-blaming (Gilbert & Irons, 2005; Leary et al., 2007; Neff & Germer, 2013), including individuals suffering from anxiety or mood disorders, as well as survivors of trauma or domestic violence. Further work in the induction of self-compassion should address the long-term psychotherapeutic benefits of self-compassion-based interventions (Allen & Leary, 2010; Gilbert & Irons, 2005), as self-compassion, unlike treatments aimed at raising self-esteem, does not require individuals to adopt unrealistic or unhealthy views of themselves (Neff, 2003b). One such intervention, Neff and Germer's (2013) Mindful Self-Compassion program, is a considerable step in the right direction, but future research should also examine the role of self-compassion as a facilitator in the effectiveness of other treatments like Mindfulness-Based Stress Reduction (Shapiro, Astin, Bishop, & Cordova, 2005). Ultimately, increasing self-compassion in individuals with self-deprecating behaviors and cognitions might work to increase not only their well-being, but also aspects of task performance and persistence with regard to non-threatening events encountered in everyday life.

Conclusion

Self-compassion is an important construct for the contemporary field of "positive psychology" (Seligman & Csikzentmihalyi, 2000) to consider more in depth. Overall, self-compassion is a psychological self-attitude at the forefront of the positive psychology movement that combines the "strength of fostering positive emotions toward oneself while simultaneously maintaining a sense of connectedness with others" (Neff, 2003a, p. 245). The implications of a self-compassionate mindset, especially in the face of adversity or failure, have been known to provide numerous cognitive and emotional benefits, as well as a buffer against negative emotional responses. Although self-compassion does not necessarily improve objective

performance accuracy and persistence on a difficult task, it may actually boost these aspects above the abilities of controls when there is no pressure to complete a task. The present study unveiled this surprising new trend - self-compassionate individuals tend to perform and persist more consistently across pressure scenarios than others, experiencing improved performance when there is no pressure and reduced performance when a degree of pressure is present. Future studies that focus on strengthening the self-compassion induction, as well as examining the effects of high-pressure situations on a self-compassionate mindset during task performance, are logical progressions in self-compassion research.

Appendix A

Law School Admission Test logic problems.

Directions: Each group of questions in this section is based on a set of conditions. Please read each question and choose the response that most accurately and completely answers each question.

Questions 1-7

A university library budget committee must reduce exactly five of eight areas of expenditure – G, L, M, N, P, R, S, and W – in accordance with the following conditions:

- If both G and S are reduced, W is also reduced.
- If N is reduced, neither R nor S is reduced.
- If P is reduced, L is not reduced.
- Of the three areas L, M, and R, exactly two are reduced.

1. Which one of the following could be a complete and accurate list of the areas of expenditure reduced by the committee?

(A) G, L, M, N, W

(B) G, L, M, P, W

(C) G, M, N, R, W

(D) G, M, P, R, S

(E) L, M, R, S, W

2. If W is reduced, which one of the following could be a complete and accurate list of the four other areas of expenditure to be reduced?

(A) G, M, P, S

(B) L, M, N, R

(C) L, M, P, S

(D) M, N, P, S

(E) M, P, R, S

3. If P is reduced, which one of the following is a pair of areas of expenditure both of which must be reduced?

(A) G, M

(B) M, R

(C) N, R

(D) R, S

(E) S, W

4. If both L and S are reduced, which one of the following could be a pair of areas of expenditure both of which are reduced?

(A) G, M

(B) G, P

(C) N, R

(D) N, W

(E) P, S

5. If R is not reduced, which one of the following answers must be true?

(A) G is reduced.

(B) N is not reduced.

(C) P is reduced.

(D) S is reduced.

(E) W is not reduced.

6. If both M and R are reduced, which one of the following is a pair of areas neither of which could be reduced?

(A) G, L

(B) G, N

(C) L, N

(D) L, P

(E) P, S

7. Which one of the following areas must be reduced?

(A) G

(B) L

(C) N

(D) P

(E) W

Appendix B

Subjective task perceptions.

We want to know how you felt about the logic problems you just completed.

How difficult, on average, were the logic problems?

1 2 3 4 5 6 7

Way too easy Way too difficult

How much time did you feel like you spent on each logic problem?

1 2 3 4 5 6 7

Almost no time A lot of time

How much effort did you put into completing the logic problems?

1 2 3 4 5 6 7

Almost no effort A lot of effort

How stressed did completing the logic problems make you feel?

1 2 3 4 5 6 7

Not at all stressed Extremely stressed

How pressured did you feel to complete the logic problems?

1 2 3 4 5 6 7

Not at all pressured Extremely pressured

How well, on average, did you think you performed on the logic problems?

1 2 3 4 5 6 7

Not well at all Extremely well

What percentage of the logic problems do you think you got correct?

10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Appendix C

Additional questions regarding participants' personal mistakes.

Think back to the personal mistake you described earlier.

1. How long ago did this mistake occur?

   _____

2. After processing the personal mistake you wrote about, how good or bad do you think the mistake was?

1 **2** **3** **4** **5** **6** **7**

Extremely Bad Neither Extremely Good

3. What is your personal experience with logic problems like these?

_____ I have never solved a logic problem before being in this study.

_____ I have solved a couple logic problems like this before.

_____ I have solved a good amount of logic problems in my time.

_____ I am an expert at logic problems and I solve them all the time.

Appendix D

Manipulation check questions.

We want to know your perception of your own situation.

Looking back, how self-critical were you when writing about your mistake?

1 2 3 4 5 6 7

Not at All Self-Critical Extremely Self-Critical

To what extent did you write about your mistake compassionately?

1 2 3 4 5 6 7

Not at All Compassionately Extremely Compassionately

To what extent were you led to believe that these logic problems were a measure of your intelligence?

1 2 3 4 5 6 7

Not at all Extremely

Appendix E

Self-Compassion and Neutral/Control induction writing prompts.

Self-Compassion Condition:

This part of the study focuses on negative life events and their effects.

Think about a time when you made a horrible mistake. It could be at work, at home, at school – anywhere.

1. Write about the event in 1-2 sentences.

On the next page, you will be given a series of prompts to help you process the mistake you wrote about. Please follow the prompts as closely as possible and try to keep the message of the prompts in mind as you complete the survey.

2. Write a paragraph expressing kindness and concern to yourself in the same way you might express kindness and concern for someone close to you who had the same experience.
3. List some of the ways in which other people have experiences similar to the one you described.
4. List the emotions you felt during this event. Next to each emotion, explain (as objectively as possible) why you felt that emotion. Try not to get carried away with your emotions.

Neutral/Control Condition:

This part of the study focuses on negative life events and their effects.

Think about a time when you made a horrible mistake. It could be at work, at home, at school – anywhere.

1. Write about the event in 1-2 sentences.

On the next page, you will be given a series of prompts to help you process the mistake you wrote about. Please follow the prompts as closely as possible and try to keep the message of the prompts in mind as you complete the survey.

2. Write a paragraph describing your role in this event.
3. Who else was involved in this event?
4. Describe your feelings about this event.

Appendix F

Pressure and No-Pressure induction prompts.

Pressure Condition:

Next, you will be asked to complete a series of logic problems.

These logic problems are a direct measure of intelligence and can accurately predict one's ability to succeed.

Do the best you can to answer them. You may skip any question at any time by pressing the "Next" button at the bottom of your screen. Remember to keep the message of the earlier prompts in mind.

No Pressure Condition:

Next, you will be asked to complete a series of logic problems.

These logic problems are NOT a direct measure of intelligence and CANNOT accurately predict your ability to succeed.

Do the best you can to answer them. You may skip any question at any time by pressing the "Next" button at the bottom of your screen. Remember to keep the message of the earlier prompts in mind.

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Table 1

Means, standard deviations, alphas, and bivariate correlations for all dependent variables

	M	SD	α	SC	SE	GB	EX	LA	OF	OS	SF	SS
SC	3.08	.70	.90	----								
SE	3.71	.87	.92	.71***	----							
GB	2.48	1.44	n/a	.18**	.07	----						
EX	1.95	.70	n/a	-.21**	-.05	-.05	----					
LA	4.25	1.41	n/a	.02	.02	.11	.10	----				
OF	2.46	1.56	n/a	-.14*	.00	.04	.43***	.21**	----			
OS	60.18	45.18	n/a	.02	.09	.06	.20**	.09	.41***	----		
SF	2.85	1.89	.94	-.03	.03	.12†	.31***	-.10	.40***	.20**	----	
SS	4.85	1.37	.77	.12†	.14*	-.08	-.04	-.07	.09	.37***	.18**	----
SD	4.70	1.59	.79	-.01	-.03	-.17*	-.20**	.01	-.23**	-.02	-.46***	.33***

Note: † $p < .09$, * $p < .05$, ** $p < .01$, *** $p < .001$. Trait Self-Compassion (SC), Self-Esteem (SE), Good/Bad Feelings about the Mistake (GB), Experience with Logic Problems (EX), How Long Ago the Mistake Occurred (LA), Objective Performance (OF), Objective Persistence (OS), Subjective Performance (SF), Subjective Persistence (SS), Subjective Distress (SD).

Table 2

Means, standard deviations, and two-tailed independent-samples t-test results for manipulation checks

	M	SD	*t*	df	p
Pressure			-5.757	217	.000
P	3.88	2.24			
NP	2.20	2.09			
Self-Critical					
SCM			2.897	218	.004
SC	3.88	1.89			
C	4.57	1.62			
Self-Compassionate					
SCM			-1.658	216	.099
SC	3.89	1.62			
C	3.51	1.71			

Note: Pressure condition (P), No-Pressure condition (NP), Self-Compassion Manipulation (SCM), Self-Compassion condition (SC), Control condition (C).

Table 3

Hierarchical regression results for objective measures of performance and persistence

	Objective Measures					
	Performance			Persistence		
Predictor	ΔR^2	β	p	ΔR^2	β	p
Step 1	.054		.007	.029		.099
TSC		-.138	.040		.030	.657
SCM		-.017	.804		-.058	.393
PM		.182	.007		.156	.021
Step 2	.004		.845	.037		.041
TSC x SCM		.023	.808		-.106	.253
TSC x PM		-.030	.753		-.097	.315
SCM x PM		-.086	.447		-.265	.019
Step 3	.002		.550	.001		.566
TSC x SCM x PM		.079	.550		-.076	.566
Total R^2	.059			.067		
N	220			220		

Note: Trait Self-Compassion (TSC), Self-Compassion Manipulation (SCM), Pressure Manipulation (PM).

Table 4

Hierarchical regression results for subjective measures of performance and persistence

	Subjective Measures								
	SF			SS			SD		
Predictor	ΔR^2	β	p	ΔR^2	β	p	ΔR^2	β	p
Step 1	.009		.579	.018		.261	.001		.960
TSC		-.032	.644		.123	.071		-.009	.896
SCM		-.083	.225		-.059	.389		-.027	.690
PM		-.026	.704		.039	.568		.022	.751
Step 2	.052		.009	.018		.268	.024		.155
TSC x SCM		-.223	.017		-.041	.664		-.007	.944
TSC x PM		-.238	.015		-.001	.991		.214	.030
SCM x PM		-.034	.762		-.221	.054		.053	.645
Step 3	.001		.613	.000		.932	.002		.563
TSC x SCM x PM		.067	.613		-.011	.932		.078	.563
Total R^2	.062			.036			.027		
N	220			220			220		

Note: Subjective Performance (SF), Subjective Persistence (SS), Subjective Distress (SD), Trait Self-Compassion (TSC), Self-Compassion Manipulation (SCM), Pressure Manipulation (PM).

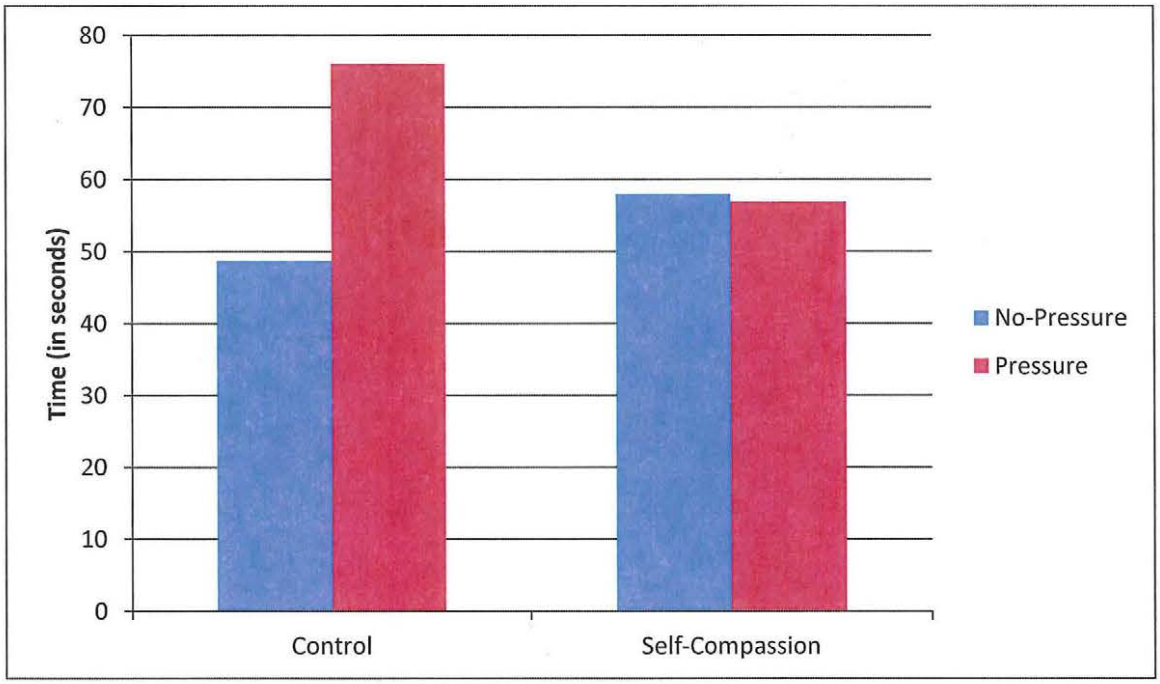

Figure 1. Univariate analyses of the significant interaction of self-compassion and pressure manipulations on objective persistence.

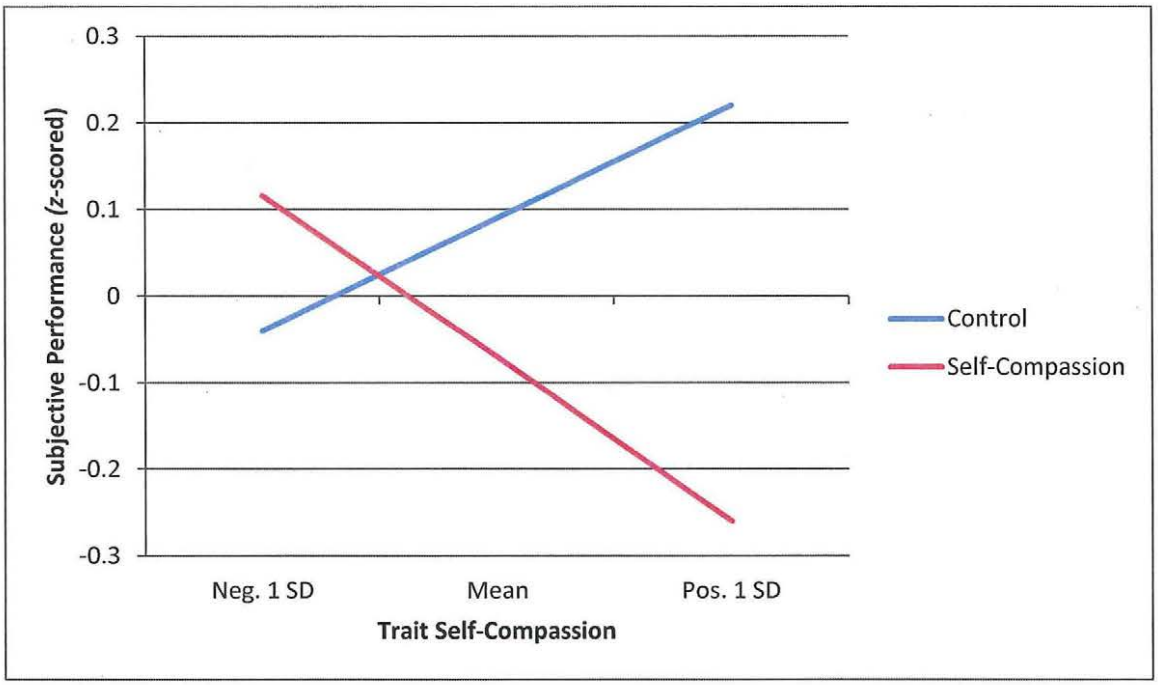

Figure 2. Univariate analyses of the significant interaction of trait self-compassion and self-compassion manipulation on subjective performance.

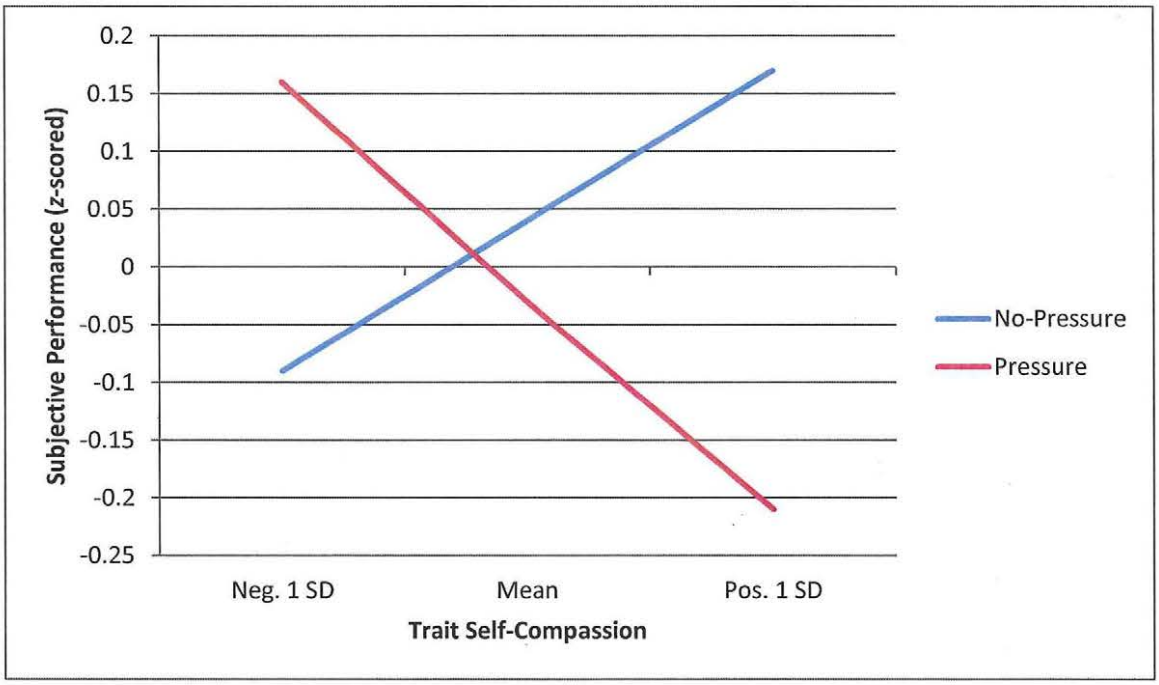

Figure 3. Univariate analyses of the significant interaction of trait self-compassion and pressure manipulation on subjective performance.

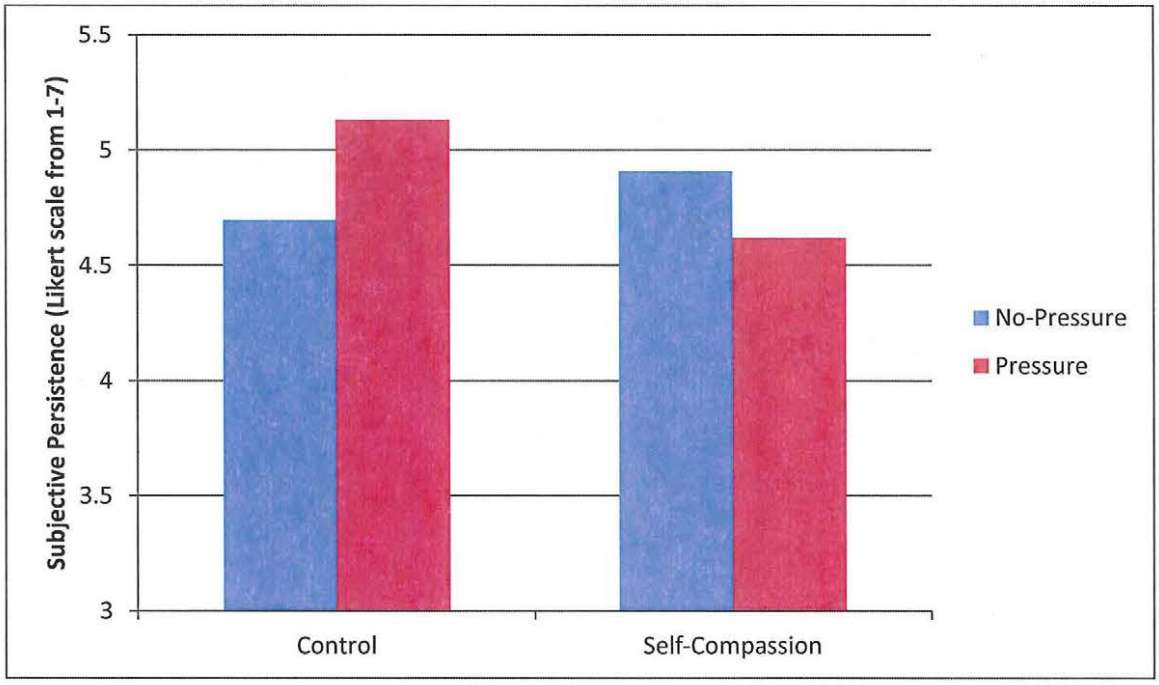

Figure 4. Univariate analyses of the marginally significant interaction of self-compassion and pressure manipulations on subjective persistence.

Figure 5. Univariate analyses of the significant interaction of trait self-compassion and pressure manipulation on subjective distress.

Curriculum Vitae

Allison Marie Landgraf was born

Allison attended Florida State University from 2007 to 2011 and received a Bachelors of Science in May 2011 in Psychology. She received the Florida State University Student Star award in 2011 for outstanding achievement in Psychology, and was featured on the university website's front page. At the University of North Florida, Allison received two transformational learning opportunity grants for her graduate work with victims of domestic violence. Allison is currently an instructor of undergraduate psychology research methods classes at the University of North Florida.

Conference Presentations

Landgraf, A. M. & Allen, A. B. (April, 2013). *Under pressure: Self-compassion as a predictor of task performance and persistence.* Poster presented at the SOARS Conference, Jacksonville, FL.

Landgraf, A. M., Kleynshteyn, I., & Allen, A. B. (January, 2013). *Perceptions of self-compassion in burdensome group members.* Poster presented at the Society for Personality and Social Psychology, New Orleans, LA.

Landgraf, A. M., Barton, J., Baxter, M., Meyer, C., & Allen, A. B. (October, 2012). *Coping with trauma-induced stress: A self-compassion intervention.* Poster presented at the Society of Southeastern Social Psychologists, Gainesville, FL.

Landgraf, A. M., Kleynshteyn, I., & Allen, A. B. (April, 2012). *Self-compassion and relational value.* Poster presented at the SOARS Conference, Jacksonville, FL.